**APPENDIX A. SFEI 2007 PROJECTS (from http://www.sfei.org/)**

**Contaminant Monitoring and Research Program**

**Project Title:** *FISH MERCURY PROJECT (1036)*
**Total Funding:** *$4,731,106*
**Project Funder:** *CALFED*
**Lead Scientist:** *JAY DAVIS*
**Collaborators:** *DEPARTMENT OF HEALTH SERVICES ENVIRONMENTAL HEALTH INVESTIGATIONS BRANCH, UNIVERSITY OF CALIFORNIA AT DAVIS, SAN JOSE STATE UNIVERSITY FOUNDATION, OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT*

**Project Title:** *MERCURY AND METHYL MERCURY PROCESSES IN NORTH SAN FRANCISCO BAY (1039)*
*TIDAL WETLAND ECOSYSTEMS*
**Total Funding:** *$1,941,293 FOR 3 YEARS ($608,987 FOR 2007, OF WHICH $144,672 IS FOR SFEI, THE REMAINDER FOR EXPENSES AND PARTNER SUBCONTRACTS)*
**Project Funder:** *CALFED*
**Lead Scientist:** *DON YEE*
**Collaborators:** *JOSH COLLINS, LETITIA GRENIER, SFEI; JOHN TAKEKAWA, STEVE SCHWARZBACH, USGS WERC/BRD; JULES EVENS, AVOCET RESEARCH ASSOCIATES; MARK MARVIN-DIPASQUALE, USGS MENLO PARK; DAVID KRABBENHOFT, USGS WISCONSIN*

**Project Title:** *GRASSLANDS BYPASS PROJECT COMPLIANCE MONITORING 2007 (1012.5)*
**Total Funding:** *$63,030*
**Project Funder:** *USBR*
**Lead Scientist:** *NICOLE DAVID*
**Collaborators:** *USBR, CVRWQCB, USGS, USFWS, BLOCK ENV. SERVICES, SUMMERS ENG., GRASSLAND AREA FARMERS, (MULTIPLE PEOPLE FROM EACH INSTITUTION)*

**Project Title:** *SAN JOAQUIN WATER QUALITY MONITORING AND ASSESSMENT (1053)*
*SAN JOAQUIN MONITORING AND ASSESSMENT STRATEGY*
**Total Funding:** *$232,000*
**Project Funder:** *USEPA*
**Lead Scientist:** *THOMAS JABUSCH*
**Collaborators:** *GREAT VALLEY CENTER, DR. BROCK BERNSTEIN*

**Project Title:** *CMARP III TECHNICAL SUPPORT (1055)*

**Total Funding:** *$104,828*
**Project Funder:** *DFG*
**Lead Scientist:** *MIKE CONNOR/THOMAS JABUSCH*
**Collaborators:** *PRBO*

**Project Title:** *CCMP SCIENCE SUPPORT (1049)*
**Project Funder:** *SFEP*
**Lead Scientist:** *RAINER HOENICKE*
**Collaborators:** *THE BAY INSTITUTE, PRBO, CEMAR*
**Total Funding:** *$45,000, SFEI PORTION: $31,000*

**Project Title:** *SURFACE WATER AMBIENT MONITORING PROGRAM (SWAMP) (1041)*
**Project Funder:** *SWRCB, MLML*
**Lead Scientist:** *RAINER HOENICKE*
**Collaborators:** *KAREN TABERSKI, RWQCB*
**Total Funding:** *$512,580, $444,780 FOR SFEI - THREE-YEAR PROJECT, DIRECTLY FUNDED BY SWRCB.*
*$130,000 SUB AGREEMENT THROUGH MLML FOR 2007.*
**Estimated budget for 2006:** *$146,000*

**Regional Watershed Science Program**

**Project Title:** *REGIONAL STORMWATER MONITORING AND URBAN BMP EVALUATION: A STAKEHOLDER-DRIVEN PARTNERSHIP TO REDUCE CONTAMINANT LOADINGS. (5031)*
**Project Funder:** *PROPOSITION 13 (STATE BOARD)*
**Lead Scientist:** *LESTER MCKEE*
**Collaborators:** *PWA, OAKLAND MUSEUM OF CALIFORNIA, WILLIAM LETTIS AND ASSOCIATES, GEOSYNTEC, MLML, AXYS ANALYTICAL*
**Total Funding:** *$440,000 FOR SFEI ($200K REMAINING)*

**Project Title:** *ALAMEDA CREEK SEDIMENT BUDGET (5046)*
**Project Funder:** *ALAMEDA COUNTY (SUBCONTRACT THROUGH PWA)*
**Lead Scientist:** *LESTER MCKEE*
**Collaborators:** *PWA, SFPUC, LAUREL COLLINS*
**Total Funding:** *$55,000 FOR SFEI*

**Project Title:** *GOING ORGANIC (5036)*
**Project Funder:** *SWRCB*
**Lead Scientist:** *NICOLE DAVID*
**Collaborators:** *FRED THOMAS, CALIFORNIA CERTIFIED ORGANIC FARMERS (CCOF)*
**Total Funding:** *$130,000 FOR SFEI - THREE-YEAR PROJECT*

**Project Title:** *ENVIRONMENTALLY RESPONSIBLE MANAGEMENT PRACTICES FOR TREE CROPS IN THE FEATHER RIVER BASIN (5037)*
**Project Funder:** *SWRCB*
**Lead Scientist:** *NICOLE DAVID*
**Collaborators:** *MARK CADY, COMMUNITY ALLIANCE WITH FAMILY FARMERS (CAFF*
**Total Funding:** *$99,000 FOR SFEI - THREE-YEAR PROJECT*

**Project Title:** *SUSTAINABLE COTTON PROJECT (5038)*
**Project Funder:** *SWRCB*
**Lead Scientist:** *NICOLE DAVID*
**Collaborators:** *MARCIA GIBBS, COMMUNITY ALLIANCE WITH FAMILY FARMERS (CAFF)*
**Total Funding:** *$77,000 FOR SFEI - THREE-YEAR PROJECT*

**Project Title:** *CRITICAL COASTAL AREAS PILOT, PHASE I (5047)*
**Project Funder:** *SWRCB*
**Lead Scientist:** *KAT RIDOLFI*
**Collaborators:** *KATHLEEN VAN VELSOR, ABAG, BECCA LAWTON, SONOMA ECOLOGY CENTER, LEA HARATANI, SANTA CRUZ COUNTY RCD*
**Total Funding:** *$200,000; $87,000 FOR SFEI*

**Project Title:** *CRITICAL COASTAL AREAS PILOT, PHASE II*
**Project Funder:** *SWRCB*
**Lead Scientist:** *RAINER HOENICKE*
**Collaborators:** *KATHLEEN VAN VELSOR, ABAG, BECCA LAWTON, SONOMA ECOLOGY CENTER, LEA HARATANI, SANTA CRUZ COUNTY RCD, KELLY NELSON, SAN MATEO COUNTY RCD, SUSAN HAYDON, SOUTHERN SONOMA COUNTY RCD, WILLIAM LETTIS AND ASSOCIATES*
**Total Funding:** *$900,000, SFEI PORTION TO BE DETERMINED DURING AGREEMENT NEGOTIATIONS*

**Project Title:** *MILLER CREEK STEWARDSHIP*
**Project Funder:** *NBWA*
**Lead Scientist:** *ROBIN GROSSINGER*
**Collaborators:** *THE WATERSHED PROJECT*
**Total Funding:** *$50,000, SFEI PORTION: $36,000*

**Project Title:** *WATERSHED SCORE CARD PROJECT (5051)*
**Project Funder:** *SONOMA ECOLOGY CENTER*
**Lead Scientist:** *KAT RIDOLFI*
**Collaborators:** *SONOMA ECOLOGY CENTER, THE BAY INSTITUTE, NAPA COUNTY RCD*

**Total Funding:** *$41,000*

**Regional Wetlands Science Program**

**Project Title:** *MONTEZUMA TECHNICAL REVIEW TEAM YEAR 3*
**Total Funding:** *$65,000*
**Project Funder:** *MONTEZUMA WETLANDS PROJECT*
**Lead Scientist:** *JOSHUA N. COLLINS*
**Collaborators:** *ROBERT BATHA, SF BAY CONSERVATION AND DEVELOPMENT COMMISSION, ANDREE BREAUX, SF BAY REGIONAL WATER QUALITY CONTROL BOARD, JANE HICKS, USACE, ERIC POLSON, PRIVATE CONSULTANT, KARL MALAMUD-ROAM, CONTRA COSTA COUNTY MOSQUITO ABATEMENT DISTRICT, HOWARD SHELLHAMMER, SAN JOSE STATE UNIVERSITY, BRUCE HERBOLD AND PAUL JONES, USEPA, JOE DIDONATO, EAST BAY PARKS DISTRICT, JAY DAVIS, BEN GREENFIELD, DON YEE, CRISTINA GROSSO, SFEI, STEVE CULBERSON, DWR.*

**Project Title:** *STATE WETLANDS PROGRAM DEMONSTRATION (WDP)*
**Total Funding:** *$337,000*
**Project Funder:** *CALIFORNIA RESOURCES AGENCY*
**Lead Scientist:** *JOSHUA N. COLLINS*
**Collaborators:** *CHRIS POTTER, CA STATE RESOURCES AGENCY, MARTHA SUTULA, SOUTHERN CALIFORNIA COASTAL WATER RESEARCH PROJECT, RICHARD SUMNER AND PAUL JONES, USEPA, MARCIA BROCKBANK, SFEP, ROSS CLARK, CALIFORNIA COASTAL COMMISSION, ADAM WISKIND, MOSS LANDING MARINE LABORATORIES, LETITIA GRENIER, SARAH PEARCE, MIKE MAY, ERIC ZHANG, MEREDITH WILLIAMS, CRISTINA GROSSO, SFEI*

**Project Title:** *SOUTH BAY SALT POND RESTORATION SCIENCE TEAM*
**Funding:** *$15,000*
**Project Funder:** *STATE COASTAL CONSERVANCY*
**Lead Scientist:** *JOSHUA N. COLLINS*
**Collaborators:** *LETITIA GRENIER, SFEI; CRISTINA GROSSO, SFEI; PLUS THE SBSPRP SCIENCE TEAM.*

**Project Title:** *SBSPRP MERCURY MONITORING*
**Total Funding:** *$750,000*
**Project Funder:** *SOUTH BAY SALT POND RESTORATION PROJECT*
**Lead Scientist:** *LETITIA GRENIER, JOSHUA N. COLLINS*

**Collaborators:** *JOSH COLLINS AND JAY DAVIS, SFEI, MARK MARVIN-DIPASQUALE, USGS, DAVE DRURY, SANTA CLARA VALLEY WATER DISTRICT, SBSPRP SCIENCE TEAM.*

**Project Title:** *BAY AREA STREAM GOALS PROSPECTUS*
**Total Funding:** *$10,000*
**Project Funder:** *USFWS SAN FRANCISCO BAY PROGRAM*
**Lead Scientist:** *JOSHUA N. COLLINS, LESTER MCKEE, RAINER HOENICKE, ROBIN GROSSINGER*
**Collaborators:** *TRISH MULVEY, CLEAN SOUTH BAY, JIM FIEDLER AND ANN DRAPER, SANTA CLARA VALLEY WATER DISTRICT, MITCH AVALON, CONTRA COSTA COUNTY FLOOD CONTROL DISTRICT, PAUL AMATO, BAY AREA WATER BOARD, JESSICA HAMBURGER, CONTRA COSTA COUNTY RESOURCE CONSERVATION DISTRICT*

**PENDING PROJECTS**

**Project Title:** *SF BAY AREA REGIONAL WETLANDS MONITORING PROGRAM*
**Funding:** *$1,250,000*
**Project Funder:** *STATE COASTAL NON-POINT SOURCE PROGRAM*
**Lead Scientist:** *JOSHUA N. COLLINS*
**Collaborators:** *ELAINE BLOK, USFWS, CHRIS POTTER, CA RESOURCES AGENCY, MARTHA SUTULA, SOUTHERN CALIFORNIA COASTAL WATER RESEARCH PROJECT, RICHARD SUMNER AND PAUL JONES, USEPA, MARCIA BROCKBANK, SFEP, ANDREE BREAUX, AN RILEY AND SHIN ROEI-LEE, BAY AREA WATER BOARD, BAY AREA HABITAT JOINT VENTURE, BAY AREA OPEN SPACE COUNCIL, LETITIA GRENIER, SARAH PEARCE, MEREDITH WILLIAMS, ERIC ZHANG, KRISTEN LARNED, MAMI ODAYA, MIKE MAY, ERIC ZHANG, CRISTINA GROSSO, SFEI.*

**Project Title:** *ELKHORN SLOUGH TECHNICAL ADVISORY COMMITTEE*
**Total Funding:** *$10,000*
**Project Funder:** *ELKHORN SLOUGH NATIONAL ESTUARY PROGRAM*
**Lead Scientist:** *JOSHUA N. COLLINS*
**Collaborators:** *JOHN LARGIER, UNIVERSITY OF CALIFORNIA AT DAVIS, US GEOLOGICAL SURVEY*

**Biological Invasions Program**

**Project Title:** *HERRING SPAWNING HABITAT ASSESSMENT: FOULING GROWTH AT PIER 45*

**Total Funding:** *$28,000, with expected $46,000 extension*
**Project Funder:** *National Fish and Wildlife Foundation*
**Lead Scientist:** *Andrew N. Cohen*
**Collaborators:** *Port of San Francisco*

**Project Title:** *Assistance with Subtidal Goals Report*
**Total Funding:** *$25,000 currently budgeted; SFEI is engaged on a cost basis*
**Project Funder:** *ABAG (on behalf of NOAA, SCC & BCDC)*
**Lead Scientist:** *Andrew N. Cohen*

**Project Title:** *San Francisco Bay Non-native Oyster Removal Project*
**Total Funding:** *$25,000*
**Project Funder:** *State Coastal Conservancy*
**Lead Scientist:** *Andrew N. Cohen*

**Historical Ecology**
**Project Title:** *Santa Clara Valley Historical Ecology Project (5027)*
**Total Funding:** *$212,000 (~$130,000 in 2007)*
**Project Funder:** *Silicon Valley Pollution Prevention Center*
**Lead Scientist:** *Robin Grossinger*
**Collaborators:** *Ruth Askevold, Chuck Striplen, SFEI ; Elise Brewster, Brewster Design Arts;*
*Technical Advisors Group: Josh Collins, Lester McKee (SFEI), Robert Leidy*
*(USEPA), SCVWD staff*

**Project Title:** *Napa Valley Historical Ecology component of the Napa Agricultural Water*
*Quality Project (5039)*
**Total Funding:** *to be determined*
**Project Funder:** *State Water Resources Control Board*
**Lead Scientist:** *Robin Grossinger, SFEI*

**Project Title:** *South County Historical Ecology Study*
**Total Funding:** *$230,000 (~$170 ,000 in 2007)*
**Project Funder:** *Santa Clara Valley Water District*
**Lead Scientist:** *Robin Grossinger*
**Collaborators:** *SFEI staff; Elise Brewster, Brewster Design Arts; SCVWD staff; Technical*
*Advisors Group; The Nature Conservancy*

**Project Title:** *Ventura County Historical Ecology Study*
**Total Funding:** *~$235,000 (~$35,000 in 2007)*
**Project Funder:** *California Coastal Conservancy*
**Lead Scientist:** *Robin Grossinger*
**Collaborators:** *CSU-Northridge, SCCWRP, Stillwater Sciences, URS*

**Information Technology**

**Project Title:** *MONTEZUMA DATA MANAGEMENT (6504)*
**Total Funding for Project:** *~$14,000 (ESTIMATED FOR 2007)*
**Project Funder:** *MONTEZUMA WETLANDS, LLC*
**SFEI Project Manager:** *CRISTINA GROSSO/SARAH LOWE*

**Project Title:** *SFEI DATA CENTER (1041 & 3007 & PENDING)*
**Total Funding:** *$174,000 ($86,000 FROM SWAMP - 2007; $38,000 FROM RMP-2007; PENDING - $50,000 FROM USEPS/DWR-FY04GRANT)*
**Project Funder:** *US EPA/DWR, SWRCB (SWAMP), RMP*
**Project Manager:** *SARAH LOWE*

**Project Title:** *INFORMATION TECHNOLOGY PURCHASING FOR 2007*
**Total Funding:** *$113,850*
**Project Funder:** *SFEI*
**Project Manager:** *MICHAEL MAY*

**Project Title:** *SOUTH BAY SALT POND RESTORATION PROJECT: GIS & WEB*
**Total Funding:** *$261,000 ($130,000 FOR 2007)*
**Project Funder:** *COASTAL CONSERVANCY*
**Project Manager:** *ERIC ZHANG/MICHAEL MAY*

**Project Title:** *WETLAND TRACKER EXPANSION*
**Total Funding:** *$80,000 EPA, $20,000 MATCH*
**Project Funder:** *EPA*
**Project Manager:** *MICHAEL MAY*

**Project Title:** *NHD STEWARDSHIP (NATIONAL HYDROLOGY DATASET (NHD) FOR THE BAY REGION)*
**Total Funding:** *$9,500*
**Project Funder:** *USGS*
**Project Manager:** *ERIC ZHANG*

**APPENDIX B. SCCWRP 2006/07 Research Plan (from http://www.sccwrp.org/)**

Welcome to the SCCWRP 2006/07 Research Plan. This Plan describes 38 projects, laid out by habitat, which demonstrates the range of interdisciplinary science we conduct and illustrates both the process-oriented and applied types of studies we perform. Although there are four different habitats targeted in this Plan (watersheds, wetlands and estuaries, beaches and shorelines, and the coastal ocean), you will see a thread of five common research themes throughout each habitat.

The first research theme is understanding background contaminant concentrations and natural variability (*Water quality and loadings from natural landscapes, Historic ecology of southern California wetlands, Sediments as reservoirs of fecal indicator bacteria*). This research helps put into focus what our environmental conditions should (or could) be and provides a baseline for comparison to areas where anthropogenic inputs are known to occur.

The second research theme is identifying and quantifying sources of anthropogenic pollutants. Some of these sources we have been tracking for decades (*Characteristics of effluents from municipal wastewater facilities*), while other projects explore new sources and types of contaminants (*Large and small scale atmospheric deposition, Emerging contaminants of concern*). Sometimes, our ideas require the development of new technology to be effective (*Source apportionment of pesticides in Newport Bay, In situ measurements of toxic organic compounds in sediment porewater*).

The third research theme is development of assessment tools. Some of these tools are for assessing impacts to human health (*Epidemiology study of beaches impacted by nonhuman sources of fecal indicator bacteria, Bioaccumulation in fishes consumed by freshwater anglers*) and others are for biological systems (Refinement of freshwater bioassessments, Development of bioindicators for ephemeral streams). Some projects are specifically directed towards setting thresholds for protecting ecosystems (*Development of sediment quality objectives for bays and estuaries, Technical support for development of nutrient criteria*). Altogether, the goal of this research theme is to enable managers to determine if environmental resources are at risk from manmade impacts.

The fourth research theme is understanding how management actions can affect positive changes by mitigating potential impacts (*Development of watershed models, Effectiveness of treatment wetlands as stormwater BMPs, Evaluation of the impact of terrestrial runoff on biological responses in the coastal ocean*). This research helps managers determine not only the most effective methods for reducing anthropogenic impacts, but also with the greatest cost-efficiency.

Our fifth research theme comprises projects dedicated towards bringing scientists and stakeholders together to achieve common regional, statewide, and national goals (*Southern California Bight regional monitoring, Southern California Ocean Observing System, Statewide assessment of wetland status and trends, Western Environmental*

*Monitoring and Assessment Program*). These programs cover a wide array of disciplines including microbiology, oceanography, remote sensing, chemistry, toxicology, and biology. One area in particular that requires regional coordination is data management and SCCWRP is focused on coalescing and distributing not just data, but information (*Web based data discovery and analysis tools, Augmenting fixed grid designs to improve local mapping, Statewide microbiology database*).

As you can see, this years' Research Plan pursues research themes that address some of the most pressing needs of the southern California environmental management community. By spreading these research themes across the habitats of greatest concern, SCCWRP can place the most salient information into the hands of both the regulated and regulatory agencies that use our products to improve their decision-making and stewardship of our natural resources.

## WATERSHEDS

**Assessment of water quality and loadings from natural landscapes; Lead Investigator: E. Stein**

**Collaborators:** This project is being conducted in collaboration with University of California at Los Angeles and is partially funded by the Los Angeles Regional Water Quality Control Board (RWQCB) and the United States (US) Environmental Protection Agency (EPA) Region IX.

**Development and Evaluation of Watershed Models; Lead Investigator: E. Stein**

**Collaborators:** This project is being conducted in collaboration with the Los Angeles/San Gabriel Rivers Watershed Council and Santa Monica Baykeeper and partially funded by the Los Angeles RWQCB, San Diego RWQCB, City of Los Angeles, Los Angeles County Department of Public Works, Orange County Resources and Development Management Department, Los Angeles Contaminated Sediments Task Force, Los Angeles County Sanitation District, and US EPA Region IX.

**Development of linked watershed-estuarine hydrodynamic and water quality models; Lead Investigator: E. Stein**

**Collaborators:** This project is being conducted in collaboration with US Environmental Protection Agency, US Geological Survey, the Los Angeles Regional Water Quality Control Board, San Diego Regional Water Quality Control Board, Port of Los Angeles, Los Angeles Department of Water and Power, City of Los Angeles, City of San Diego, Santa Monica Bay Restoration Commission, U.S. Army Corps of Engineers, and California State Coastal Conservancy.

**Effects Of Regionwide Fires on Depostion, Runoff, and Emissions to the Southern California Bight; Lead Investigators: E. Stein and K. Maruya**

**Collaborators:** This project is being conducted in collaboration with the US Geological Survey, the Ventura County Watershed Protection District and Environment Canada. Researchers at UCLA and CSULA are also conducting related research at our study sites.

**Refinement of Freshwater Bioassessments in Southern California; Lead Investigator: K. Schiff**

**Collaborators:** This project is being conducted in collaboration with the CDFG and is partially funded by the Stormwater Monitoring Coalition, the Los Angeles County Sanitation District, and the SWRCB Surface Water Ambient Monitoring Program.

**Development of Bioindicators for Ephemeral Streams; Lead Investigator: E. Stein**

**Collaborators:** This project is being conducted in collaboration with California State University San Marcos, California Academy of Sciences, and Scripps Institute of Oceanography

**Bioaccumulation in Fishes Consumed by Anglers in Ventura and Los Angeles County Watersheds; Lead Investigator: J. Allen**

**Collaborators:** None at present.

**Characteristics of Effluents From Large Municipal Wastewater Treatment Facilities; Lead Investigator: E. Stein**

**Collaborators:** This project is being conducted in collaboration with the City of Los Angeles (Environmental Monitoring Division), County Sanitation Districts of Los Angeles County, Orange County Sanitation District, and City of San Diego (Metropolitan Wastewater Department).

**Large and Small Scale Deposition of Atmospheric Trace Metals in Southern California; Lead Investigator: K. Schiff**

**Collaborators:** This project is being conducted in collaboration with the University of California Los Angeles (Dr. Keith Stolzenbach) and is partially funded by the San Diego and Los Angeles RWQCBs.

**Comparison of Mass Emissions Among Sources in the Southern California Bight; Lead Investigator: E. Stein**

**Collaborators:** There currently are no collaborators for this project.

## WETLANDS AND ESTUARIES

**Historic Ecology of Southern California's Coastal Watershed and Wetlands; Lead Investigators: E. Stein and M. Sutula**

**Collaborators:** This project is being conducted in collaboration with the University of Southern California, California State University Northridge, San Francisco Estuary Institute, and the Los Angeles and San Gabriel River Watershed Council. The project is funded by grants from the Rivers and Mountains Conservancy and from USC Sea Grant.

**Relationships Between Dissolved Oxygen and Algae Distribution in Newport Bay; Lead Investigator: E. Stein**

**Collaborators:** This project is being conducted in collaboration with the Orange County Resources and Development Management Department, Irvine Ranch Water District and Moss Landing Marine Laboratories (Dr. Krista Kamer). This project is partially funded with a Proposition 13 grant to the County of Orange.

**Source Apportionment of Pesticides in the Upper Newport Bay Watershed; Lead Investigator: K. Maruya**

**Collaborators:** This project is being conducted in collaboration with University of California, Riverside (Dr. Jay Gan) and is partially funded by a joint State Water Resources Control Board/Department of Pesticide Regulation PRISM grant.

**Investigation of Contaminants in the Upper Newport Bay Picivorous Food Web; Lead Investigator: J. Allen**

**Collaborators:** This project is being conducted in collaboration with California State University, Long Beach (Dr. Zed Mason) and University of California, Riverside (Dr. Daniel Schlenk), and Santa Ana Regional Water Quality Control Board. It is partially funded by the State Water Resources Control Board through a Proposition 13 grant.

**Effectiveness of Treatment Wetlands as Stormwater BMPs and Compatibility With Wildlife Beneficial Uses; Lead Investigator: M. Sutula**

**Collaborators:** This project is being conducted in collaboration with the Los Angeles, Santa Ana and San Diego Regional Water Quality Control Boards, the California State Coastal Conservancy, and member agencies from the Southern California Wetland Recovery Project. This project is partially funded by the State Water Resources Control Board through a Proposition 13 grant.

**Regional Monitoring/Assessment Program for Southern California Wetlands; Lead Investigators: E. Stein and M. Sutula**

**Collaborators:** This project is being conducted in collaboration with the Southern California Wetland Recovery Project, California State Coastal Conservancy, San Francisco Estuary Institute (SFEI), California Coastal Commission, Moss Landing Marine Laboratory, and the US EPA – Region IX and Office of Research and Development and is funded by the EPA Office of Water.

**Landscape-Scale Assessment Of Southern California Riparian Ecosystems Condition; Lead Investigator: M. Sutula**

**Collaborators:** This work is being conducted in collaboration with the Southern California Wetland Recovery Project, the California State Coastal Conservancy and the Conception Coast Project, with funding from the NOAA Coastal Services Center.

**Southern California Wetland Recovery Project Science Advisory Panel; Lead Investigator: E. Stein**

**Objectives:** Southern California has experienced one of the highest proportional loss of wetlands relative to any state in the country. Both the Federal and State governments have expressed goals of short-term, no-net loss and long-term, net gain of wetlands. However, coordination of a comprehensive wetland protection and recovery strategy in California has been hindered by the fact that 17 Federal and State agencies share jurisdiction and responsibility for wetland stewardship, leading to administrative and bureaucratic challenges.

In 1997, the 17 Federal and State wetland management agencies formed the Southern California Wetland Recovery Project (WRP) with a goal of increasing regional coordination of wetland preservation, restoration and management. The WRP is now a partnership of Federal and State agencies working in concert with local government, environmental organizations, and scientists to develop and implement a comprehensive plan for preserving and restoring the region's wetlands. The WRP consists of a Board of Governors and three standing committees: The Wetlands Managers Group (WMG) is responsible for drafting the regional restoration plan and advising the Governing Board on regional acquisition, restoration, and enhancement priorities; the Public Advisory Committee that represents community and interest group views to the Governing Board; and the Science Advisory Panel (SAP) that ensures that the best available science is incorporated into the decision-making processes of the WRP.

At the request of Board of Governors, SCCWRP staff provides technical assistance to the Science Advisory Panel, with the ultimate goal of improving the regional planning of wetland conservation, restoration, and management in southern California. SCCWRP staff provide technical assistance to the WRP by 1) developing and administering an extramurally-funded research program on the constraints to wetland restoration in Southern California, 2) procuring funding and technical assistance to implement the development of condition assessment, decision support, and other tools to aid the WRP in prioritizing and evaluating preservation and restoration projects, and 3) procuring funding and provide technical assistance to develop a regional wetlands monitoring program.

**Collaborators:** This project is being conducted in collaboration with the Southern California Wetland Recovery Project and its 17 member agencies.

## COASTAL OCEAN

**Development of Sediment Quality Objectives for Bays and Estuaries; Lead Investigator: S. Bay**

**Collaborators:** This project is being conducted in collaboration with numerous regulated, regulatory and non-governmental organizations and is funded by the SWRCB.

**Development of Methods to Characterize Sediment Toxicity in the Southern California Bight; Lead Investigator: S. Bay**

**Collaborators:** This study is being conducted in coordination with the U.S. EPA Environmental Research Laboratory in Narragansett (Rhode Island) and the UC Davis Environmental Toxicology Department.

**In Situ Measurement of Toxic Organic Compounds in Sediment Porewater; Lead Investigator: K. Maruya**

**Collaborators:** This project is conducted in collaboration with the Chinese Academy of Sciences and is partially funded by the Cooperative Institute for Coastal and Estuarine Technology (CICEET).

**Estimating Pollutant Loadings and Fluxes in Impaired Coastal Waterways; Lead Investigator: K. Maruya**

**Collaborators:** This project is conducted in collaboration with Loyola Marymount University (Dr. Rachel Adams) and is partially funded by the City of Los Angeles and the USC Sea Grant Program.

**Emerging Contaminants of Concern Ni Coastal Waters, Sediment, And Biota; Lead PI: K. Maruya**

**Collaborators:** This research is being conducted in collaboration with the University of California San Diego (Dr. Michael Baker), University of California Riverside (Dr. Daniel Schlenk), California State University Long Beach (Dr. Kevin Kelley), the Southern Nevada Water Authority (Dr. Shane Snyder), the Mississippi State Chemistry Lab (Dr. Kang Xia), Orange County Sanitation District, and the Los Angeles County Sanitation Districts.

**Endocrine Disruption in Coastal Fish; Lead Investigator: S. Bay**

**Collaborators:** This research is being conducted in collaboration with the University of California San Diego (Dr. Michael Baker), University of California Riverside (Dr. Daniel Schlenk), California State University Long Beach (Dr. Kevin Kelley), and the Ocean Institute. Additional collaboration and partial funding for this project is provided by the Orange County Sanitation District, City of San Diego, City of Los Angeles, and Los Angeles County Sanitation Districts.

**Evaluation of the Impact of Terrestrial Nutrient Runoff on the Biological Response of the Coastal Ocean; Lead Investigator: E. Stein**

**Collaborators:** This project is being conducted in collaboration with the NASA Jet Propulsion Laboratory, University of California Los Angeles, University of Southern California, and the U.S. Geological Survey.

**Relative Contaminant Concentrations In Whole Fish, Liver, And Muscle Tissue In Demersal Fishes Used In Environmental Monitoring; Lead Investigator: J. Allen**

**Collaborators:** This project is being conducted in collaboration with the City of San Diego and the Los Angeles County Sanitation Districts.

## BEACHES AND SHORELINES

**Epidemiology Study to Assess Swimmer Health Risk from NPS Sources of Bacteria; Lead Investigator: K. Schiff**

**Collaborators:** This project is being conducted in collaboration with the University of California Berkeley (Dr. Jack Colford), the US EPA, the Orange County Sanitation Districts, and Heal the Bay. This project is funded by a Consolidated Grant (Prop 50) from the State Water Resources Control Board and by the City of Dana Point.

**Rapid Indicator Methodology for Measuring Fecal Indicator Bacteria; Lead Investigator: S. Weisberg**

**Collaborators:** We will collaborate with the Orange County Sanitation District. This project is partially funded by the SWRCB (Prop 50).

**Storm Drains and Sediments as Reservoirs of Fecal Indicator Bacteria; Lead Investigator: J. Griffith**

**Collaborators:** Collaborators for this project include University of Minnesota (Dr. Mike Sadowsky) and University of California, Los Angeles (Dr. Jennifer Jay).

**Statewide Microbiology Monitoring Database; Lead Investigator: L. Cooper**

**Collaborators:** This project is funded by the SWRCB and the State Department of Health Services.

**Marine: Multi Agency Rocky Intertidal Network; Lead Investigator: L. Cooper**

**Collaborators:** This project is being conducted in collaboration with the MARINe member organizations including the University of California at Santa Barbara, University of California at Santa Cruz, California State University Fullerton, National Park Service, University of California at Los Angeles, National Center for Environmental Analysis and Synthesis, and Minerals Management Service (MMS). This project is funded by MMS.

## REGIONAL MONITORING AND ASSESSMENT

**Southern California Bight Regional Monitoring: 2003; Lead Investigator: S. Weisberg**

**Collaborators:** This project is being conducted in close cooperation with all of the Authority's member organizations, which will be represented on the Regional Monitoring Steering Committee and its associated working groups. Over 60 different organizations including regulated, regulatory, and non-governmental agencies are collaborating on this study.

**Western Environmental Monitoring and Assessment Program (EMAP); Lead Investigator: S. Weisberg**

**Collaborators:** This project is being conducted in collaboration with USEPA, the State Water Resources Control Board, the San Francisco Estuary Institute, Moss Landing Marine Lab, and the California Department of Fish and Game. This project is funded by the USEPA Office of Research and Development.

**Augmenting Fixed Grid Designs to Improve Local Mapping of Environmental Conditions in the Southern California Bight; Lead Investigator: K. Ritter**

**Collaborators:** This project is being conducted in collaboration with the City of San Diego and Colorado State University (Dr. Scott Uruqhart, Dr. Jennifer Hoetig).

**Statewide Assessment of Wetland Status and Trends; Lead Investigator: E. Stein**

**Collaborators:** This work is being conducted in collaboration with the California State Resources Agencies, the State Water Control Board, the Regional Water Quality Control Boards 1,2,3,4,8, and 9, the California Coastal Commission, the California State Coastal Conservancy, and the San Francisco Estuary Institute, with funding from US EPA Region IX.

**Statewide Surface Water Ambient Monitoring Program Data Management Node; Lead Investigator: L. Cooper**

**Collaborators:** This work is being conducting in collaboration with Moss Landing Marine Laboratories, Department of Water Resources, SWRCB, and San Francisco Estuary Institute, with funding from the SWRCB.

**Web Based Data Discovery and Analysis Tool; Lead Investigator: L. Cooper**

**Collaborators:** None.

**Southern California Coastal Ocean Observing System; Lead Investigator: S. Weisberg**

**Collaborators:** This project is being conducted in collaboration with the Scripps Institute of Oceanography and the other members of SCCOOS.

## COOPERATIVE RESEARCH

**Member Agency Technical Consulting**

**Objectives:** One of SCCWRP's functions is to provide SCCWRP's member agencies with scientific and technical assistance as requested. In the past, cooperative research activities have primarily involved assistance with field sampling activities, but have also included assistance with laboratory procedures and other related issues. In addition, SCCWRP has provided its member agencies with statistical and data base support. More recently, SCCWRP has assisted its member agencies in extensive long-term planning issues.

**Collaborators:** Staff will coordinate with all of the SCCWRP member agencies.

**APPENDIX C: Great Lakes Commission Priorities (from http://www.glc.org/ )**

The full list of near-term priorities presented to Congress during an annual Great Lakes Day, included specific legislation is as follows:

- Stop aquatic invasive species by passing the National Aquatic Invasive Species Act, legislation (H.R. 553 and S. 336) that authorizes construction and maintenance of the dispersal barrier to prevent the introduction and spread of harmful aquatic invasive species – such as the Asian carp – and appropriate $20.2 million to the Great Lakes Fishery Commission to control sea lamprey and manage fishery resources.
- Clean Up Toxic Sediments by appropriating $54 million for the Great Lakes Legacy Act to clean up contaminated sediments and restore Great Lakes "toxic hot spots."
- Restore Great Lakes Wetlands by appropriating $28.5 million to partner with the states in restoring 200,000 acres of valuable Great Lakes wetlands and $16 million for the Great Lakes Fish and Wildlife Restoration Act.
- Protect Water Quality by appropriating $1.35 billion for the Clean Water State Revolving Fund (CWSRF) to update sewerage systems, safeguard drinking water and protect coastal health in the Great Lakes. Reauthorize the CWSRF in order to provide additional funding in future years.
- Enact Great Lakes Restoration Legislation by authorizing the recommendations from the Great Lakes Regional Collaboration restoration strategy and funding coordinated implementation actions.

**APPENDIX D.** ***2007-2009 Puget Sound Conservation and Recovery Plan and Budget*** **(from** http://www.psat.wa.gov/ )

**D:1 Letter from PSAT Chair**:
December 15, 2006
To: All those interested in a healthy Puget Sound

I am pleased to present the draft ***2007-2009 Puget Sound Conservation and Recovery Plan*** on behalf of the Puget Sound Action Team and the Puget Sound Council. The Action Team, created in law in 1996, is responsible for defining, coordinating and putting into action the state's environmental protection and restoration agenda for Puget Sound. I am formally submitting this biennial plan to the Legislature for consideration as it develops the state's budget for the coming biennium.

The Puget Sound ecosystem is one of Washington's crown jewels. The Sound is home to a magnificent array of life, including 200 species of fish, 26 kinds of marine mammals, 100 species of sea birds, and thousands of species of marine invertebrates and plants. However, while the Sound appears beautiful on the surface, beneath its waters the news is troubling.

Significant declines in populations of salmon, orcas and certain species of marine birds and fish, closures of shellfish beds, and a growing dead zone in Hood Canal are all warning signals that the very best of Puget Sound is still at risk. The building blocks of a healthy environment—clean water, healthy and connected habitat and an intact food web —continue to erode. The Action Team's ***State of the Sound Report 2007*** (available in January 2007) reports in greater detail on the status and trends in Puget Sound's environment.

In response to continuing declines in Puget Sound, Governor Chris Gregoire created the Puget Sound Partnership in December 2005. This high-level, broad-based commission was charged with charting a new course to reach a healthy Puget Sound by 2020. The Partnership delivered its final report to Governor Gregoire in November 2006 with a suite of recommendations to scale up our region's efforts to save Puget Sound. Governor Gregoire used the Puget Sound Partnership recommendations, along with an earlier draft of this 2007-2009 plan and budget, to develop her 2007-2009 budget proposal on Puget Sound.

**This plan contains the Governor's proposed budget for Puget Sound over the next two years.** The plan combines existing levels of funding with significant new targeted investments to drive key actions needed to achieve a healthy Puget Sound by 2020.

The ***2007-2009 Puget Sound Conservation and Recovery Plan*** focuses on eight core priorities, which address critical threats to the ecosystem:

· Clean up contaminated sites and sediments.
· Prevent toxic contamination.
· Prevent harm from stormwater runoff.
· Prevent nutrient and pathogen pollution.
· Protect functioning marine and freshwater habitats.
· Restore degraded marine and freshwater habitats.
· Protect species diversity.
· Prepare for and adapt Puget Sound efforts to a changing climate.

While this plan details only the work of the state agencies, we recognize that protecting and restoring Puget Sound requires all levels of government and the private sector to work together effectively. Every day, thousands of people in local governments, tribal governments, federal agencies, the business sector and the environmental community as well as individual citizens lend their energy and creativity to the conservation challenges in Puget Sound. By clearly describing the state's proposed agenda in Puget Sound, we hope that all of our partners will be able to better plan their efforts and to see where we have opportunities for collaborative and complementary work in a broader partnership.

After the Legislature approves a budget for the 2007-2009 biennium, we will issue a final work plan based on that budget.

For a cleaner and healthier Puget Sound,

Brad Ack
Chair

## D:2 GOVERNOR'S 2007-09 PUGET SOUND BUDGET

### Detailed Description by Action Area

**Prevent and Cleanup Toxics Pollution ($54.7 million)**

**1. Accelerate Clean-ups through on the Ground Actions ($50.6 Million)**

**a. Puget Sound Clean-ups Aquatic - $40 million ($39M Local Toxics, $1M Local)** Grants will be provided to local governments and ports for clean-up work at 18 contaminated sites within ½ mile of Puget Sound including $14.5 million in Bellingham Bay;$17.6 million for Elliot Bay and $5.5 million for Commencement Bay.

b. **Puget Sound Upland Sites - $4.7 million (State Toxics)** The Department of Ecology will initiate or continue cleanup work at 25 sites within ½ mile of Puget Sound. This represents 20 percent of the 115 identified sites for which clean-up has not begun.

c. **Clean up State owned Aquatic Lands - $5.9 million (State Toxics)** The Department of Ecology will initiate or continue focused cleanup work at 25 sites within ½ mile of Puget Sound on state owned aquatic lands. Work will occur in Port Gardner, Fidalgo Bay, Kitsap Peninsula/Port Gamble, Port Angeles, Shelton/Oakland Bay, and Dumas Bay.

2. **Help Local Governments and Business Prevent Toxic Contamination ($4.1 million)**

a. **Prevent contamination of Urban Bays - $1.7 million ($1.3 million State Toxics Account, $360,000 Local Toxics Account)** The Department of Ecology will work with permitted and unpermitted facilities in Commencement Bay and the Duwamish River to prevent contamination and recontamination from stormwater. Work will include technical assistance to 225 businesses in reducing toxics and additional compliance inspections.

b. **Local Toxics Control Specialist - $2 million (Local Toxics)** In Puget Sound it is estimated that there are 30,000 businesses that likely generated hazardous waste, yet less than 1,000 are state permitted facilities. The Department of Ecology will provide grants to local governments to hire ten toxics control specialists to provide assistance to 1,000 to 3,000 businesses on ways to reduce solid waste and toxics. Theses efforts are estimated to reduce 25 tons of hazardous waste and 3,000 tons of solid waste a year.

c. **Finding Safer Chemical Alternatives - $400,000 (State Toxics)** One roadblock to using less toxic materials is the lack of information on safer alternatives**.** DOE would review and compile research on alternatives toxics for chemical included in chemical action plans and provide this information to 37,000 businesses, state agencies, and local governments. Information would be available to and estimated 50,000 citizens through a state website, 1-800 number, publications and presentations.

**Restore Damaged Forest, Rivers, Shorelines and Marine Waters ($37.4 Million)**

**1. Protect Essential Habitat through on the Ground Actions ($35.5 Million)**

a. **Salmon Habitat Restoration - Salmon Recovery Funding Board - $24 Million (State Bonds)** Grants would be provided to local governments and tribes for projects to restore salmon habitat including removal of fish passage barriers, restoration of estuaries, flood plains riparian areas and

remove riverbank armoring. These funds will leverage federal and local fund sources.

b. **Restore Nearshore and Shoreline Habitats - $7 million (State Bonds)** Continues the Department of Fish and Wildlife's successful efforts to restore neashore and shoreline habitat in Puget Sound. This funding will concentrate upon restoring natural marine shoreline process including protection and restoration of beach sediments and removal of existing bulkheads. These funds will leverage federal and local fund sources.

c. **Remove creosote pilings - $4 million (State Toxics)** The Department of Natural Resources will remove 700-800 tons of creosote logs from Puget Sound beaches.

d. **Improve and restore farmland - $1.2 million (Water Quality Account)** The State Conservation Commission would provide grants to Puget Sound Conservation Districts to provide technical assistance and project match to farmers, and horse owners to implement projects and develop management plans to restore habitat and improve water quality.

e. **Remove Derelict Vessels - $500,000 (Derelict Vessel Acct.)** The Department of Natural Resources would remove at least 26 derelict and abandoned vessels in Puget Sound. These vessels are high risk for oil spills and their removal was recommended by the Oil Spill Advisory Council.

f. **Aquatic Restoration Projects - $200,000 (ALEA)** The Department of Natural Resources will undertake restoration projects on aquatic lands in Pierce, Thurston, Kitsap and King Counties.

**2. State Agency Actions**

1. **Control Invasive Tunicates - $500,000 (ALEA)** The Department of Fish and Wildlife and the Puget Sound Action Team would continue efforts to control and remove invasive tunicates which threaten native Puget Sound species and habitats.

**Reduce Stormwater Runoff ($25.3 million)**

1. **Prevent further contamination with on the Ground Actions ($14.6 Million)**

a. **Local Innovative Stormwater Pilots and Retrofit Projects - $14.1 million ($9.1 Million State Bonds, $5 million Local Toxics Account)** Grants will be provided to local governments to retrofit existing stormwater projects to handle stormwater in more effective manner and to pilot low impact development techniques such as

pervious pavement, rain gardens and bioswales. These projects prevent toxic stormwater from entering Puget Sound as well as demonstrate the effectiveness of these techniques.

b. **State Parks Stormwater Improvements - $571,000 (State Bonds)** State Parks would permit and design projects to reduce stormwater entering Puget Sound at Saltwater and Belfair State Parks

**2. Enhance Local Government Programs to Control Stormwater ($9.5 million)**

a. **Phase II Stormwater Jumpstart Grants - $9 million ($7 million Local Toxics Account, $2 million Federal)** Approximately 100 cities and counties will be required to meet new standards to reduce stormwater. DOE will provide grants to local governments to help them develop and implement revised local stormwater management programs including; local stormwater ordinances, and proper operation and maintenance of stromwater facilities.

b. **Low Impact Stormwater Project Assistance - $500,000 (Water Quality Account)** The Puget Sound Action Team or its successor will continue to provide technical assistance to local governments to revise their stormwater regulations and development standards to allow for low impact stormwater projects.

**3. Ramp-up Stormwater Compliance - $280,000 (Other Funds)** In November 2005, the DOE revised construction stormwater permit requirements. An additional 2,400 permits are anticipated next biennium. Additional staff will issue permits, provide technical assistance, and conduct compliance inspections.

**4. Monitor the Effectiveness of Stormwater Controls - $800,000 ($400,000 Water Quality Account. $400,000 WQPFA)** New stormwater permits require additional monitoring by local governments. In order to reduce costs for state agencies and local governments the Department of Ecology would institute a monitoring consortium to coordinate water quality monitoring for stormwater, wastewater and other pollutants. Other parties to the consortium would also contribute funds or in-kind resources. Additional stormwater monitoring will also be initiated.

**Clean-up Areas with Immediate Septic and Nutrient Problems ($56.3 million)**

**1. Clean-ups areas with on the Ground Actions ($50 Million)**

**a. On Site Septic Replacement - $3 million (Water Quality Account)** Through a partnership with Shorebank and the Hood Canal

Coordinating Council, grants and loans will be provided to repair or replace approximately 200 failing septic systems in Hood Canal. State funds will be matched by $3.4 million in private funding.

**b. Reduce Pollution through Reclaimed Water - $6.3 million ($4.8 million State Bonds, $1.5 million Water Quality Account)** Grants are provided to help local government implement projects to reclaim wastewater. Increasing water reuse helps increase streamflows and reduces toxics, nutrients and pathogen discharges in wastewater. The Department of Ecology will also adopt new rules for reclaimed water.

**c. Wastewater Treatment Upgrades - $31.7 million (Public Works Trust Fund)** Additional loans will be provided through the Public Works Board for projects to upgrade wastewater systems around Puget Sound. Projects will help to eliminate combined sewer overflows in Anderson Cove (Bremerton) and Port Angeles Harbor as well as construct new treatment plant in Blain and Lake Stevens.

**d. Belfair Sewer - $4.8 million (State Bonds)** Additional grants are provided to provide wastewater treatment around Belfair on Hood Canal

e. **State Parks Wastewater Improvements - $4.2 million ($2.1 million State Bonds, $2.2 State Toxics Account)** Installs a park-wide wastewater treatment system at Bay View State Park to replace 30- to 50-year old septic tanks and all beach area tanks. All sink waste drains will be tied in into the wastewater treatment system. Other work will be conducted at Fort Flagler, Larabee and Belfair state park.

2. **Help Local Governments Manage Septic Systems - $4 million ($3.6 million GF-S, $600,000 ALEA)** Support local health districts as they implement programs in marine protected areas to prevent contamination from septic systems. Programs will include monitoring, education, technical assistance and enforcement. This is a follow up to legislation (HB 1458) passed in 2006 requiring local health districts to develop plans to protect high priority marine waters. Monitoring contamination sources of shellfish beds will be increased to meet federal requirements. Regulatory oversight and technical assistance to Large Onsite Sewage systems will also increase.

3. **Identify Sources and Distribution of Nutrients - $1.89 million (Federal and other funds)** Understanding the sources and fate of nutrients entering Puget Sound is necessary to make decisions on the best ways of cleaning up pollutants. DOE will create an environmental model of South Puget Sound (below the Tacoma Narrows) which will be used to establish discharge limits and to evaluate the potential results of different management actions. Additionally work will continue to evaluate the effectiveness of advanced

septic systems in removing nitrogen and continue to determine how nitrogen from septic systems enters marine waters in Hood Canal.

**Protect Essential Habitat and Prevent Further Losses ($40.7 Million)**

1. **Protect Essential Habitat through on the Ground Actions ($33 Million capital)**

    a. **Salmon Habitat Protection Grants- Salmon Recovery Funding Board - $21.75 Million (State Bonds)** Grants would be provided to local governments and tribes through the SRFB for projects to protect riparian areas, floodplains and forested habitats and marine shorelines to maintain natural process and functions.

    b. **Washington Wildlife and Recreation Program (WWRP) - $12 million (State Bonds)** As part of the WWRP there is anticipated to be $12 million worth of habitat and recreation projects in Puget Sound. The most significant of these includes a 91 acre expansion of the Woodard Bay Natural Resource Conservation Area; adds 57 acres to Deception Pass State Park; protects 500 acres of riparian/wetland habitat on Decker Creek (Mason County) and purchases development rights on a 24 acre farm in the Dungeness River Delta.

2. **Support local governments ($2.32 million GF-S)**

    a. **Enhance Shoreline Protection - $320,000 (GF-S)** The Department of Fish and Wildlife will work with PSAT, DNR, and the Army Corps to develop guidance and permitting documents for improved methods of shoreline protection.

    b. **Enhancing local compliance – $2 million (GF-S)** A grant program would be established for local governments to hire staff in ten watersheds to improve compliance with state and local habitat laws particularly critical area and shoreline ordinances. A local match would be required to access these funds.

3. **Improve wetlands mitigation and hydraulic permits - $1.5 million (GF-S)** The Department of Ecology will increase compliance checks of wetland mitigation projects to ensure that developers are meeting the wetland permit conditions. WDFW would hire an outside consultant to evaluate the effectiveness of WDFW's hydraulic permit conditions.

4. **Salmon and Eelgrass Monitoring - $759,000 ($691,000 GF-S, $68,000 ALEA)** In order to determine the effectiveness of current salmon recovery strategies and effectively make management decisions, monitoring of smolts and returning salmon would be expanded into new areas currently without

adequate monitoring. This effort would provide the information necessary for federal agencies need to make delisting decisions and is based upon the recommendations of the Governor's Monitoring Forum. The Department of Natural Resources will also acquire site-specific monitoring equipment that allows the Department to assess eelgrass loss in Hood Canal and Wescott Bay adjacent to San Juan Island.

**Citizens Partnership ($5.75 million)**

1. **Citizen Partnership -$5.0 million ($2.5 million Water Quality Account, $2.5 million private)** A multi-year campaign would be initiated to build public awareness about the problems facing Puget Sound, explain how the public can change their behavior and engage in direct actions to support and protect the Sound. State funds would be required to be matched by an equal amount of non state funding.

2. **Public Participation Grants - $750,000 (Local Toxics)** The Department of Ecology will also provide grants to communities, neighbor and watershed groups for environmental activities, outreach and education in Puget Sound.

**APPENDIX E: EPA's National Estuaries Program: a model for financing**

(text extracted from http://www.epa.gov/owow/estuaries/fund.htm )

**Sustainable Financing Strategies**

On average, the National Estuary Programs (NEPs) raise $16.50 for every $1 provided by EPA. The NEPs successfully leverage federal seed money by:

- Developing finance plans that identify and evaluate funding sources and financing strategies to implement their priority actions.
- Building strategic alliances with implementing partners to obtain their financial support.
- Demonstrating environmental results that convince stakeholders that the NEPs are effective, can be trusted with their resources, and will give them credit for their contributions.
- Providing seed money or staff to initiate and develop new funding sources.

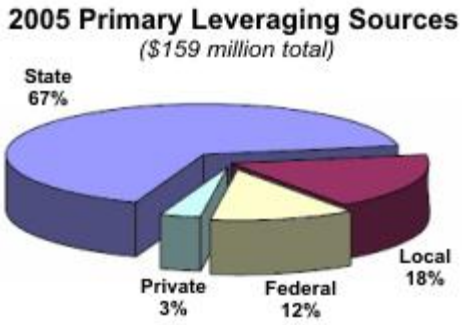


**Figure 1:** This additional funding comes from a variety of federal, state, local, and private sources. There are many sustainable funding examples from the NEPs. For example, they raise money from annual membership appeals, special appeals, grants, license plate revenues, fines and penalties, taxes, and intergovernmental agreements.

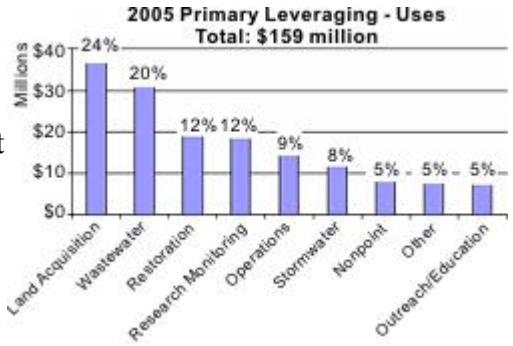


**Figure 2:** This money is used to implement priority actions, such as land acquisition, outreach and education, and habitat restoration, outlined in each of the NEPs Comprehensive Conservation Management Plans.

## Additional Resources:

Watershed Funding Web site provides links to requests for proposals, tools, databases, and information about sources of funding to practitioners and funders that serve to protect watersheds.

Community-Based Watershed Management: Lessons from the National Estuary Program (NEP) highlights the highly successful approaches to watershed management implemented by the 28 National Estuary Programs (NEPs). Chapter 4: Developing a Management Plan contains additional information on how the NEPs have developed sustainable finance strategies and plans. Chapter 5: Implementing a Management Plan outlines how the NEPs have obtained funds for operating costs and project implementation.

**EPA Watershed Funding Programs**

Nonpoint Source Pollution Funding
Provides information on grant opportunities to implement efforts to address nonpoint source pollution, including Clean Water Act Section 319 grants and Nonpoint Source Minigrants.

Targeted Watershed Grants
The Targeted Watershed Grants Program is designed to encourage successful community-based approaches and management techniques to protect and restore the nation's waters. Any governmental or nonprofit non-governmental entity is eligible to receive a grant under this program, and inter jurisdictional watershed partnerships are encouraged. Through these grants, EPA expects to see real environmental results, such as the return of native fish species and increased recreational opportunities and to discover innovative solutions to improving and sustaining water quality.

Wetlands Funding
Includes information on EPA grant opportunities including Wetlands Program Development Grants, Five Star Restoration Grants, the State Revolving Fund program, and other sources of federal funding for protecting wetlands.

National Estuary Program Assistance Agreements
EPA's National Estuary Program was established by Congress in 1987 to improve the quality of estuaries of national importance. The Clean Water Act Section 320 directs EPA to develop plans for attaining or maintaining water quality in those estuaries. This page includes information on EPA grant opportunities and requirements for the 28 participants currently in the National Estuary Program.

Additional EPA Funding Opportunities for Water
Includes information on other sources of funding for projects that address waste water and drinking water issues (Clean Water State Revolving Fund and Drinking Water State Revolving Fund), and improve water quality (Beach Act Grants, Water Pollution Control Program Grants, and Water Quality Cooperative Agreements). Additionally, specific information for Tribes is available.

Regional Grant Opportunities
EPA's ten regional offices provide information on both regional and national sources of funding for a variety of water and watershed related projects.

Environmental Education Grants Program
This program supports environmental education projects that increase the public awareness about environmental issues and increase people's ability to make informed decisions that impact environmental quality. EPA awards between $2 and $3 million annually. More than 75 percent of these grant recipients receive less than $15,000.